

REMARKS

Claims 1-16 were filed and examined in the February 8, 2005 office action. New claims 17-20 are presented herein.

In the February 8, 2005 action, the specification was objected to because of a hyperlink in paragraph 5. The foregoing amendment addresses that objection.

The office action rejected claims 4 and 10-12 under 35 U.S.C. § 112, second paragraph, on indefiniteness grounds. These claims have been reworded to remove the matter giving rise to the rejection, namely, "a header associated with the digital content" in claim 4, "readout" in claims 10 and 11, and "a header of a track or song the digital media content" in claim 12.

The present invention, in general terms, is directed to defending against a particular type of attack on a watermark-based system intended to provide a secure domain for digital media: attack by importing into the system a content segment that is sufficiently short that a watermark cannot reliably be detected in the segment. The claimed method and apparatus prevent importation of such segments into the secure domain.

All claims have been rejected under 35 U.S.C. § 102(b) as anticipated by Kalker, "System Issues in Digital Image and Video Watermarking for Copy Protection," and/or Linnartz, "The 'ticket' concept for copy control based on embedded signalling." These references relate to watermark systems and possible attacks on such systems, but neither reference discusses an attack based on importing a content segment that is sufficiently short that a watermark cannot reliably be detected in the segment, and so neither discloses a defense to such an attack. As discussed more fully below, because neither reference discloses preventing importation into the secure domain of digital content segments that are so short that watermarks cannot reliably be detected, neither reference anticipates the claims.

Independent claim 1 recites a method including "preventing importing to the secure domain of sections of the digital content having a length less than or equal to a length associated with the length of reliable watermark detection." Kalker describes watermarking systems for copy protection of digital media content, specifically, video content. The portions cited against claim 1 disclose that CPTWG's requirements for a DVD watermarking system include detecting the copy protection state every 10 seconds; that in one proposed system, the copyright state is checked at the playback device; and that in the same proposed system, content that has a copy protection state of CO (copy once) is allowed to play if a ticket (a cryptographic counter holding the number of playbacks or recordings of the content that are still allowed) associated with the content has a value of 3 or 1, and content that has a copy protection state of CN (copy never) is allowed to play only if a ticket associated with the content has a value of 1. The Kalker article appears to presume that 10 seconds would be sufficient time to reliably detect a watermark in the content.

The Kalker article does not disclose in the cited portions (and does not appear to disclose elsewhere) a system in which segments having certain time lengths may be imported into a secure domain, and segments having other time lengths are prohibited from being imported into the secure domain. Nor does it discuss special handling of segments having a duration that is too short for reliable watermark detection. Kalker does state at page 564, column 2, lines 38-40 that the smallest unit that can be read from or written to a DVD is a complete sector (32k), which usually contains too little video data to allow watermark detection. However, the suggested solution (page 564 column 2, lines 40-44) is to provide a buffer that can hold sufficient sequential video data to enable watermarks to be detected. There is no suggestion that small segments should not be written or read. If anything, the suggestion is that complete sectors of 32k, usually too small to allow watermark detection, may be read or written. Accordingly, not only does Kalker fail to disclose the invention of

claim 1, Kalker suggests away from it.

Claim 1 was also rejected as anticipated by Linnartz, which, like Kalker, discusses DVD copy protection and the proposals made in response to the CPTWG requirements. The cited portions of Linnartz likewise merely disclose the use of watermarks and the CPTWG requirement of watermark detection in 10 seconds or faster. As with Kalker, Linnartz does not disclose in the cited portions (and does not appear to disclose elsewhere) a system in which segments having certain time lengths may be imported into a secure domain, and segments having other time lengths are prohibited from being imported into the secure domain. Nor does it discuss special handling of segments having a duration that is too short for reliable watermark detection. There is no suggestion that small segments should not be written or read. Accordingly, Linnartz fails to disclose the invention of claim 1.

Independent claim 7 recites an apparatus including "a detector for segments of the digital content having a length equal to or less than a preset length, the preset length being so short that the watermarks cannot be reliably detected, and a signal processor responsive to the detector and the digital content for preventing importing to the secure domain at least some of the digital content segment being detected as having a length less than or equal to the preset length." Claim 7 was rejected as anticipated by both Kalker and Linnartz, essentially on the same basis as claim 1 was rejected. As discussed above, neither reference addresses an attack using short segments. Neither Kalker nor Linnartz discloses a content segment length detector that detects whether the length of a segment is equal to or less than a length that is too small for reliable watermark detection, or a signal processor that is responsive to detected segment length and prevents importation of at least some such too-short segments into a secure domain. As discussed above, neither reference addresses an attack using short segments. Accordingly, neither Kalker nor Linnartz anticipates claim 7.

With regard to the dependent claims, they are patentable because they depend from patentable claims. Moreover, to the extent that the limitations of the dependent claims relate to operation of a system responsive to actual segment length as compared to the segment length required for reliable watermark detection by the system, such limitations are also not present in the cited references. For instance, but without limitation, claims 4 and 12 address operation when data associated with content indicates that importation of the content is permitted, and provide that a determination that the content may be imported supersedes the determination that a segment is too short for reliable watermark detection. The mere disclosure in Kalker and Linnartz, that systems may respond to copy protection status data and allow copying, does not anticipate the limitation of claims 4 and 12 because the copy protection status response in the references is not arranged as claimed, to co-operate with the segment length response.

New claims 17-20 are presented in the foregoing amendment. It is respectfully submitted that they are supported throughout the specification, are directed to the same invention as in claims 1-16, add no new matter, and are patentable over Kalker and Linnartz for the reasons set forth herein.

It is respectfully submitted that the foregoing amendments place the application in condition for allowance. Reconsideration and further examination is requested, and a notice of allowance is earnestly solicited.

Respectfully submitted,



Steven R. Petersen, Reg. No. 31,287
Attorney
(914) 333-9640